

Application No.: 10/033436

Case No.: 57283US002

**Remarks**

The specification has been reviewed and certain errors were found in the identification of some of the references that were cited. Corrections by Amendment have been made. Title pages of the references are included herewith to show the correct numbers and inventors' names.

Claims 1 and 5 have been amended to indicate that the first major surface of the backing includes "a pattern of non-abrasive raised areas and depressed areas for supporting an abrasive coating at least over said raised areas." Basis for this amendment may be found in the specification on page 9, lines 4-5. These claims have also been amended to indicate that shaped engaging elements are selected from the group consisting of (a) filament stems having flattened or rounded distal ends integrally shaped into said second major surface and (b) hook elements integrally shaped into said second major surface. Basis for the amendment is present in claims 3 and 4. Basis for "rounded" distal ends may be found in Fig. 4 of the drawings and on page 13 of the specification, lines 14-23. Claims 10 and 11 have been amended to delete "unitarily" and substitute in its place "integrally" to be consistent with claim 1.

Claims 1-16 are submitted for reconsideration.

Claims 1-3, 5-10 and 12-16 were rejected under 35 U.S. C. §103(a) as being unpatentable over Stout et al. in view of Law et al.

In making this rejection, the Office Action indicates that Stout et al. teaches a backing 11 for an abrasive article comprising a sheet-like polymeric substrate, (col. 12, lines 11-12), having a first major surface including a uniform or random pattern of non-abrasive raised and depressed areas, (col. 6, lines 1-10), an abrasive article having an abrasive coating which has a shaped abrasive surface comprising raised and depressed areas, (Fig. 2), comprising silicon carbide abrasive particles and a binder make coating selected from acrylate resins. This section further indicates that Law, et al. teach a backing with filament stems having flattened distal ends (Fig. 9). The Office Action then concludes that it would be obvious to one having ordinary skill in the art at the time of the invention that the invention was made to provide the abrasive article of Stout, et al. with a backing having filament stems, as taught by Law, et al., in order to enhance the backing attachment capabilities.

Application No.: 10/033436

Case N.: 57283US002

Claims 4 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Stout, et al. in view of DeVoe, et al. The Office Action further indicates that DeVoe, et al. teach hook elements, 203, integrally shaped into the second major surface of the backing pad.

It is submitted that the rejection is inappropriate and it should be withdrawn.

Stout, et al. disclose a backing which has a series of ribs, i.e., alternating thick and thin portions, molded into the backing for further advantage when desired for certain applications. The molded-in ribs can be used for designing in a required stiffness or "feel during use" (using finite element analysis), improved cooling, improved structural integrity, and increased torque transmission when the ribs interlock with a back-up pad. (Column 6, lines 1-10). Unlike the backup pad of the present invention, the raised areas for the backing of the present invention are for receiving an abrasive coating. By contrast, the purpose of Stout, et al. back-up pad is to provide structural properties rather than for application of an abrasive coating thereon.

In describing the surface upon which Stout, et al.'s abrasive coating will be applied, Stout, et al. indicate as follows:

That is, the back surface 32 is the surface upon which there is typically no abrasive material. Thus, the surface of the backing on which the abrasive material is coated is generally flat, i.e., without ridges or ribs.

Thus, Stout, et al. do not contemplate having raised areas and depressed areas on the surface upon which the abrasive coating will be applied and it, thus, would be contrary to Stout, et al.'s invention to have such a surface as defined in the present claims.

While Stout, et al. indicate the possibility of including an attachment system to secure the coated abrasive to a tool, there is no teaching of including such an attachment system with a backing which has raised and depressed portions on the opposite side upon which the abrasive coating will be applied.

The rejection of Claims 4 and 11 under 35 U.S.C. § 103 (a) as being unpatentable over Stout, et al. in view of DeVoe, et al. is likewise inappropriate and it should be withdrawn. It is contrary to the invention of Stout, et al. to include non-abrasive raised areas and depressed areas on the surface upon which an abrasive coating will be applied. Stout, et al. include raised and

Application No.: 10/033436Cas No.: 57283US002

depressed areas on the backside of the backing rather than on the surface upon which the abrasive coating will be applied. While DeVoe, et al. teach an abrasive product having filament stems with shaped distal ends, DeVoe, et al. fail to teach a backing having depressed areas and non-abrasive raised areas for receiving an abrasive coating. Thus, DeVoe, et al. fail to provide sufficient additional disclosure to render obvious applicants' claims.

It is submitted that the claims are now in condition for allowance and such action is accordingly earnestly solicited.

Respectfully submitted,

12/16/03  
Date

By: 

Richard Francis, Reg. No.: 25,393  
Telephone No.: (651) 733-7519

Office of Intellectual Property Counsel  
3M Innovative Properties Company  
Facsimile No.: 651-736-3833